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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/710,698	07/29/2004	Tai-Yuan Chen	12739-US-PA	4697

31561 7590 12/10/2008

JIANQ CHYUN INTELLECTUAL PROPERTY OFFICE
7 FLOOR-1, NO. 100
ROOSEVELT ROAD, SECTION 2
TAIPEI, 100
TAIWAN

EXAMINER	
SALZMAN, KOURTNEY R	
ART UNIT	PAPER NUMBER
1795	

NOTIFICATION DATE	DELIVERY MODE
12/10/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USA@JCIPGROUP.COM.TW
Belinda@JCIPGROUP.COM.TW

Office Action Summary	Application No.	Applicant(s)	
	10/710,698	CHEN ET AL.	
	Examiner	Art Unit	
	KOURTNEY R. SALZMAN	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 September 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *8-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *8-15* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The Amendment filed in the RCE filed September 30, 2008 has been entered and fully considered.

2. Claims 8-15 remain pending in the application.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 8-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over BRAEUER et al (US 5,164,063) and YOKOYAMA et al (JP 62-089864, abstract).

Regarding claims 8 and 13, BRAEUER et al teaches a sputtering cathode featuring a magnetron comprising two magnet arrangements as shown in figure 3. A reaction chamber is shown to be present in figure 1 above the target substrate at the bottom of the figure. Reference number 9 and 9' represent the first set of magnets, while reference numbers 10 and 10' represent the second set. These magnets are shown planarly and axially symmetric to each other. The magnets adjacent to each other within the sets or 9 and 9' or 10 and 10' have opposite poles as shown by the N and S designations on the figure respectively. BRAEUER et al teaches in column 3, lines 23-26, that the polarity of the magnet sets is only selected in order to form the plasma ring, but does not restrict the magnet polarities to those shown in figure 3.

BRAEUER et al does not show the magnets symmetric to each other having opposite orientations.

YOKOYAMA et al teaches a magnetron sputtering device comprising magnets whose poles can be either N or S, neither is required for efficiency.

At the time of invention, it would have been obvious to try any combination of polarities of the magnet sets together. There are only 4 combinations of polarities which create the plasma of BRAEUER et al where the magnets within the sets have different polarities. Therefore, it would have been obvious to manipulate the magnet sets of BRAEUER et al, by utilizing either polarity interchangeably as shown in YOKOYAMA et al, without undue experimentation, and still yield the predictable result of creating the plasma rings of BRAEUER et al.

Regarding the final limitation of claim 13, it is obvious to begin magnetron rotation before deposition begins and end rotation after deposition is complete, as this is the normal order of the process steps in a magnetron system.

Regarding claim 9, in conjunction with the previous rejection of claim 8, BRAEUER et al teaches a chamber shown in figure 1, with a target holding pot

14 as the target backboard, shown at the top of the chamber. At the bottom of the chamber, piece F is shown to function as the platen.

Regarding claim 10, in conjunction with the previous rejection of claim 9, the central axis of BRAEUER et al is shown in figure 1 to be M and is stated in the abstract to run through the center of the target, and therefore the backboard.

Regarding claim 11, in conjunction with the previous rejection of claim 8, BRAEUER et al shows in figure 3, the first magnet to be any magnet of group 10 and the second magnet to be of group 10'. The third magnet is the axially symmetric counterpart to the first magnet in group 9 and the fourth is the axially symmetric counterpart to the second magnet in group 9'. The first magnet has a pole of N and the fourth magnet has a pole of S. The second magnet has a pole of S and the third magnet has a pole of N.

Regarding claim 12, in conjunction with the previous rejection of claim 8, BRAEUER et al shows in figure 3, the first magnet to be any magnet of group 10 and the second magnet to be of group 10'. The third magnet is the planarly symmetric counterpart to the first magnet in group 9, where the plane is the horizontal plane through center portion M of the yoke. The fourth is the planarly symmetric counterpart to the second magnet in group 9'. The first magnet has a

pole of N and the fourth magnet has a pole of S. The second magnet has a pole of S and the third magnet has a pole of N.

Regarding claims 14 and 15, in conjunction with the previous rejection of claim 13, it would be obvious to one of ordinary skill in the art for a rotating magnetron or rotating yoke plate to at least rotate 180n or 360n during the process of deposition and in most cases many more rotations.

Response to Arguments

5. Applicant's arguments with respect to claim 8 have been considered but are moot in view of the new ground(s) of rejection.

The argument on page 4 of the remarks regarding the reason to combine the two references is addressed in the grounds of obviousness in the above rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to KOURTNEY R. SALZMAN whose telephone number is (571)270-5117. The examiner can normally be reached on Monday to Thursday 6:30AM-5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam Nguyen can be reached on (571) 272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kaj K Olsen/
Primary Examiner, Art Unit 1795

krs
12/4/2008